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Received: 17 Aug. 2015
Accepted: 25 Sep. 2015
Editor: R. Causse

Coris julis cleaning a *Mola mola*, a previously unreported association

by

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Résumé. – Première mention du comportement de nettoyage d'un poisson-lune (*Mola mola*) par une girelle (*Coris julis*).

Le comportement de nettoyage d'un poisson-lune par une girelle a été observé en juin 2015 à La Herradura en Méditerranée (Espagne). Cette interaction a duré plus de 70 secondes durant lesquelles la girelle s'est concentrée sur le nettoyage de la tête et des branchies du poisson-lune, qui est resté immobile pendant tout ce temps. C'est la première mention de ce type d'interaction entre ces deux espèces.

Key words. – Labridae – Molidae – Mediterranean – Symbiotic association – Cleaning behavior.

Cleaning behavior has been documented around the world for multiple species of fishes and invertebrates (Van Tassel *et al*., 1994). In this relation, the host benefits from ectoparasite removal (Arnal *et al*., 2001), and the cleaner gets readily available prey from a living substrate (Zander and Sötje, 2002).

In the Mediterranean, the labrid *Symphodus melanocercus* (Risso, 1810) is the primary cleaner fish, however, many other species act as supplementary cleaners, doing it only occasionally (Van Tassell *et al*., 1994). These include juveniles of several wrasses, namely *Symphodus mediterraneus* (Linnaeus, 1758), *Symphodus ocellatus* (Linnaeus, 1758), *Symphodus tinca* (Linnaeus, 1758), *Thalassoma pavo* (Linnaeus, 1758), *Ctenolabrus rupestris* (Linnaeus, 1758), and *Coris julis* (Zander and Sötje, 2002). According to Moosleitner (1980), juvenile *Coris julis* is an apparently opportunistic cleaner in some areas of the Mediterranean and a frequent cleaner in other areas, mainly in the northwest Mediterranean.

The sunfish (*Mola mola*), the largest and most widely distributed marine bony fish (Sims *et al*., 2009), is one of the species known to act as a host for cleaner fish (Hobson 1969; Henriques and Almada, 1997). One of the possible reasons is their commonly reported heavy parasite loads (Konow *et al*., 2006; Pope *et al*., 2010).

Here, we document the feeding activity of a *C. julis* on the body surface of a *M. mola*, which corresponds to an unreported cleaning association.

MATERIAL AND METHODS

While SCUBA diving in June 2015, in La Herradura (36°43'9.858"N; 3°43'38.784"W) western Mediterranean, Alboran Sea (Fig. 1), a sunfish of approximately 40 cm TL was observed in the water column, at 15 m depth, approximately 5 m from the bottom. It was stationary, and posing at a 45° angle to the bottom.

Upon closer investigation, the authors observed a female *Coris julis* of approximately 12 cm TL, gliding around the sunfish body (Fig. 2).

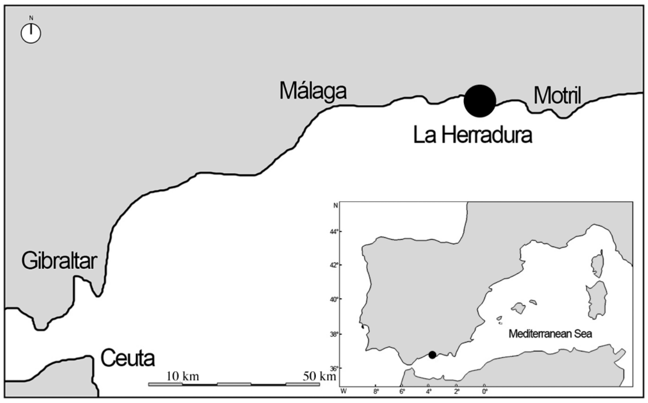

Figure 1. - Location of the observation in La Herradura, Spain.

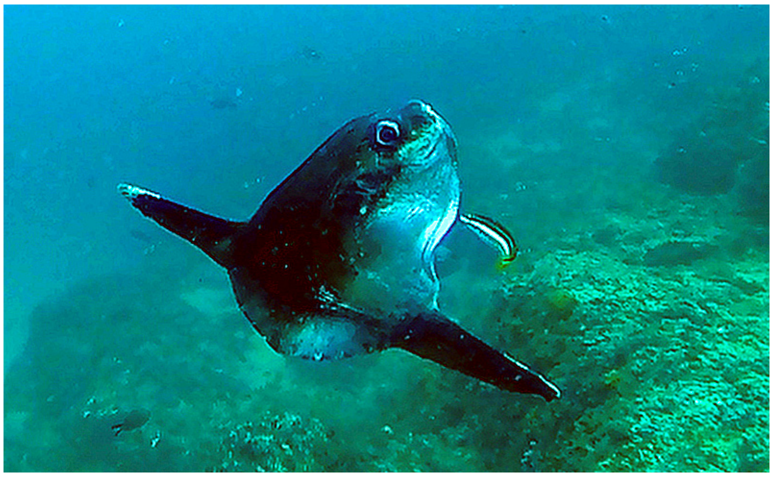

Figure 2. - *Mola mola* being cleaned by a *Coris julis*.

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RESULTS

Both sunfish and wrasse exhibited a typical cleaning behavior, with the host remaining practically motionless and allowing the wrasse to glide around its body.

The cleaner focused on the posterior ventral area of the host body, picking possible parasites (unspotted from distance) mainly in the region of the head, gills and pelvic fin. This activity lasted for more than 70 seconds. Thereafter, the sunfish flapped its dorsal and pelvic fin simultaneously and swam away, and the wrasse swam back to the reef nearby.

DISCUSSION

This observation reports the cleaning activity of a *Coris julis*, a known facultative cleaner in this area of the Mediterranean (Zander and Sötje, 2002), on a *Mola mola*, a species known to act as host for various fish cleaner species (Hobson, 1969; Henriques and Almada, 1997).

Their association as host-cleaner, however, is here reported for the first time.

La Herradura is located in front of an upwelling area (Cebrián and Ballesteros, 2004) and in the entrance to the Atlantic Sea, a typical environmental for the occurrence of *Mola mola* (Thys *et al*., 2015). The environmental richness of this area increases the probability of cleaning stations to occur, as the occurrence of host and cleaners is high.

Further studies about the abundance of *Mola mola* and its supposedly common interaction with cleaner fish within the area need to be done in order to support this assessment.

Acknowledgements. – The authors would like to thank Jacky Judas for his help in abstract translation to French, Nuno Tavares for the help given in the map illustration and Iñaqui Pérez from Open Water La Herradura dive center for precious information and help during dive operations.

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